Remedial Priority System

Human Health Layers

Surface Water Intakes

March 2012

Human Health Layers

The Human Health Layers developed by the Department are:

- Water Media
  - Private Wells
  - Community Supply Wells
  - Non-Community Supply Wells
  - **Surface Water Intakes**
  - Surface Water Body (Surface Water Quality Standards)
  - Agricultural
- Soil Media
  - Soil Exposure: Residential,
  - Soil Exposure: School / Day Care
- Vapor Media
  - Vapor Exposure: Residential
  - Vapor Exposure: School / Day Care

Surface Water Intakes

Private Well Layer ➔ derived Layer (a layer created by DEP) based on distance from a surface water potable intake.

- not based on population served.

- Mode of Exposure:
  - People drinking (Ingestion / Dermal) contaminated surface water
- Background:
  - The NJ Water Supply Master Plan identifies several major surface water systems throughout the State
  - The water purveyors may have one or more of the following:
    - run-of-the-river reservoir system,
    - surface water intake that directs water to a reservoir
    - surface water intake that directly diverts water from a river to the water treatment facility.

Surface Water Intakes

- Source Layers:

  Four sources were used to identify and delineate the Surface Water Intakes:

  - Surface Water Intake Points (not visible to the public)
    - Basis for Layer: identify the location of the SW Intake
  - Water Supply Management Areas (not visible to the public)
    - Basis for Layer: identify the location of the Water Supply Management Areas
  - Stream Layer
    - Basis for Layer: used to refine the GIS layer also identify the flow direction of the stream
  - 2002 Land Use Layer
    - Basis for Layer: used to refine the GIS layer

Surface Water Intakes

- Cells values (cont.)
  - Cells values are based on the distance the cell to the Surface Water Intake
  - upstream section of the stream that feeds the intake is buffered
  - different values are given based on the distance the cell is from the intake

Surface Water Intakes	Cell Value
500' buffer 1 mile upstream with wetlands	6
300' buffer 1 mile upstream with wetlands	8
500' buffer 1 mile upstream on lake or stream	11
300' buffer 1 mile upstream on lake or stream	15
300' buffer on watershed management area or intake	375
On watershed management area or intake	500

- Calculation Method
  - The maximum cell value that intersects the ground water Extent Area is used

Surface Water Intakes

- The following is the method used to create the Surface Water Intakes GIS layer

Surface Water Intake Layer

Creating the Surface Water Intakes

Surface Water Intakes

- The surface water Intake Layer and Water Management Layers are not available to the public.

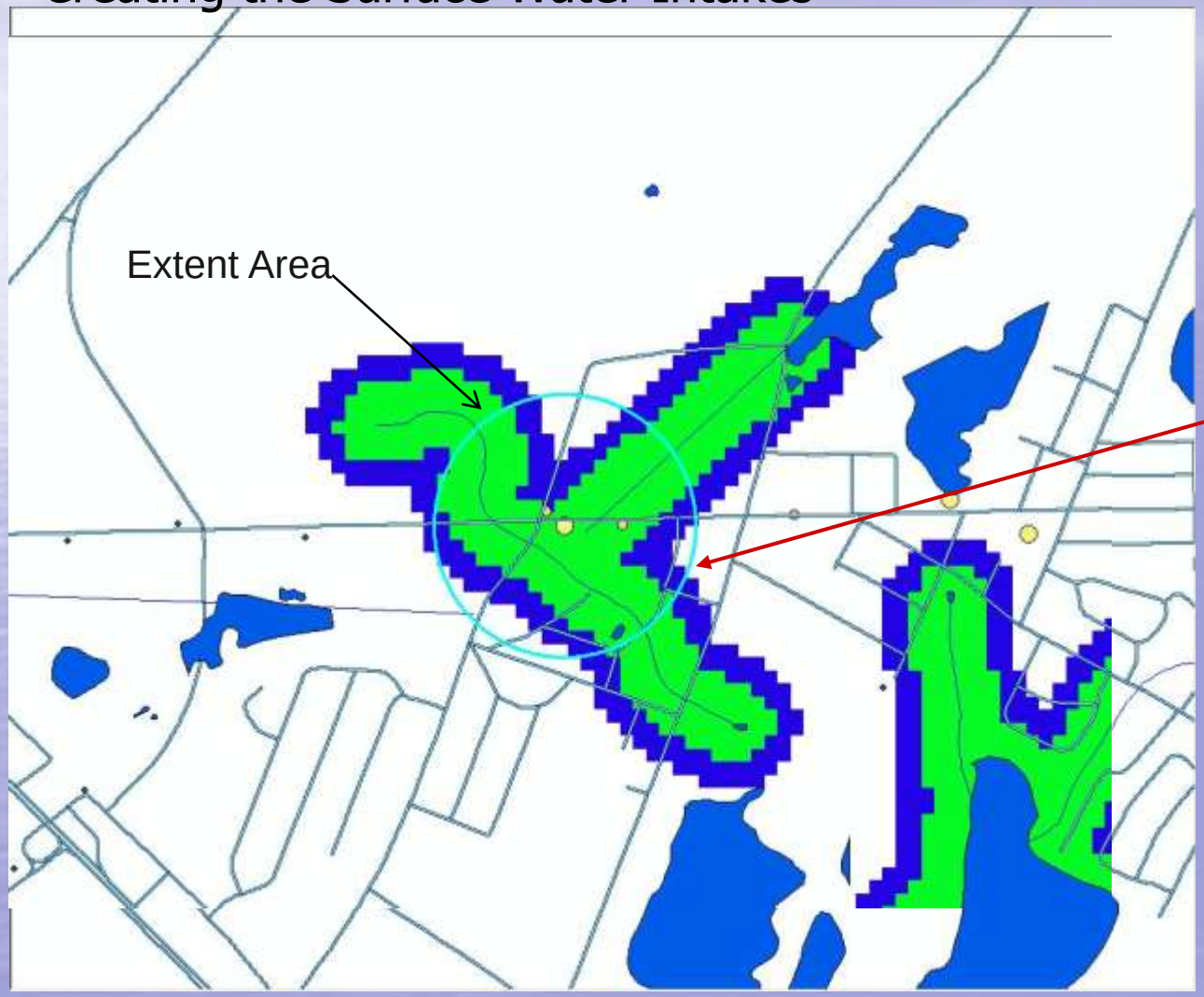
The actual steps used to create this Layer can not be displayed at this time.

The following Cell values were used to generate the SW Intake Layer

Surface Water Intakes	Cell Value
500' buffer 1 mile upstream with wetlands	6
300' buffer 1 mile upstream with wetlands	8
500' buffer 1 mile upstream on lake or stream	11
300' buffer 1 mile upstream on lake or stream	15
300' buffer on watershed management area or intake	375
On watershed management area or intake	500

Surface Water Intake Layer

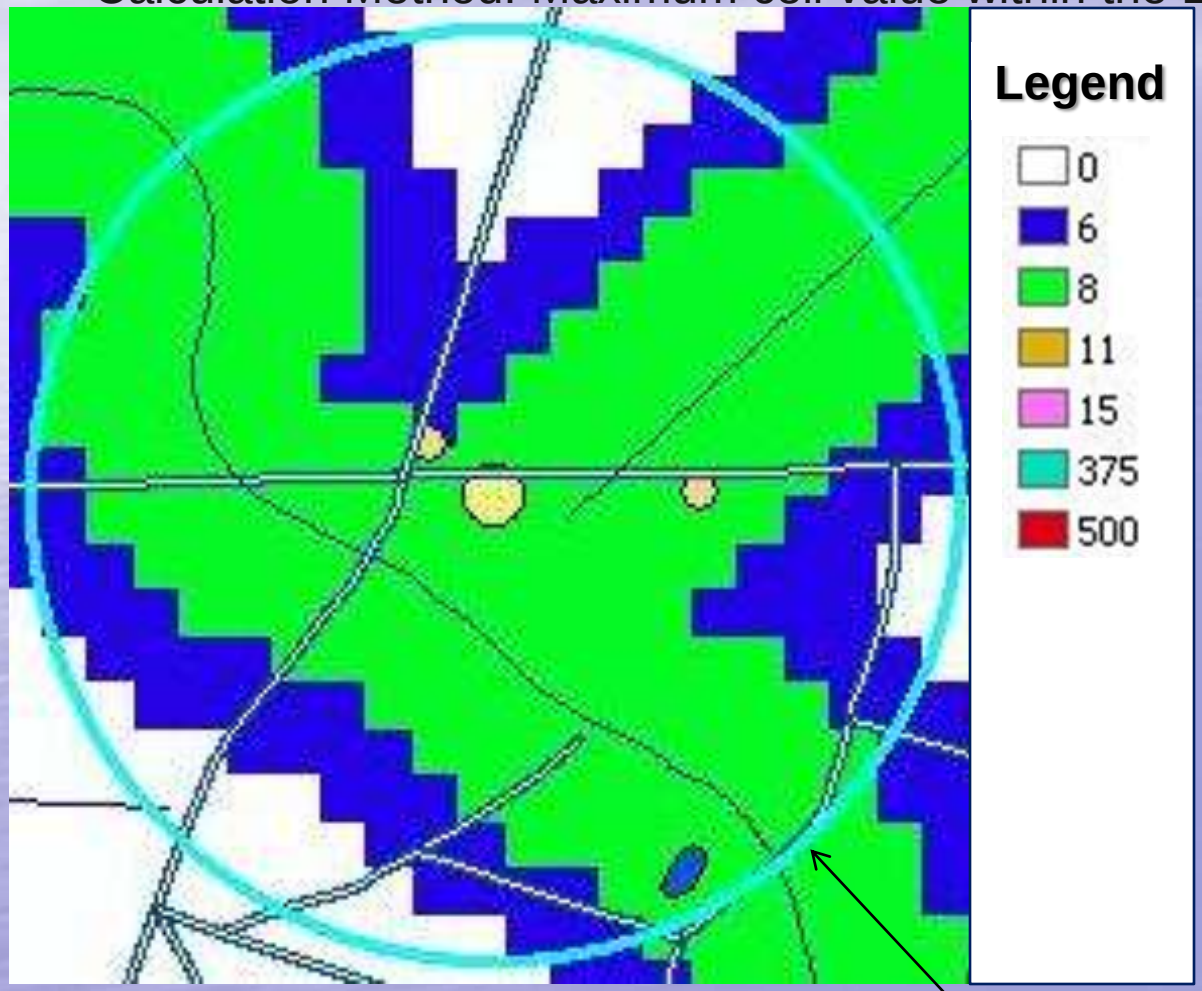
Creating the Surface Water Intakes



RPS Model overlays the Ground Water Extent Area for the site

Surface Water Intakes

Calculation Method: Maximum cell value within the Extent Area



Zoom in

Maximum cell value that is within the Extent Area

– **Maximum** cell value = 8

Final Score = 8

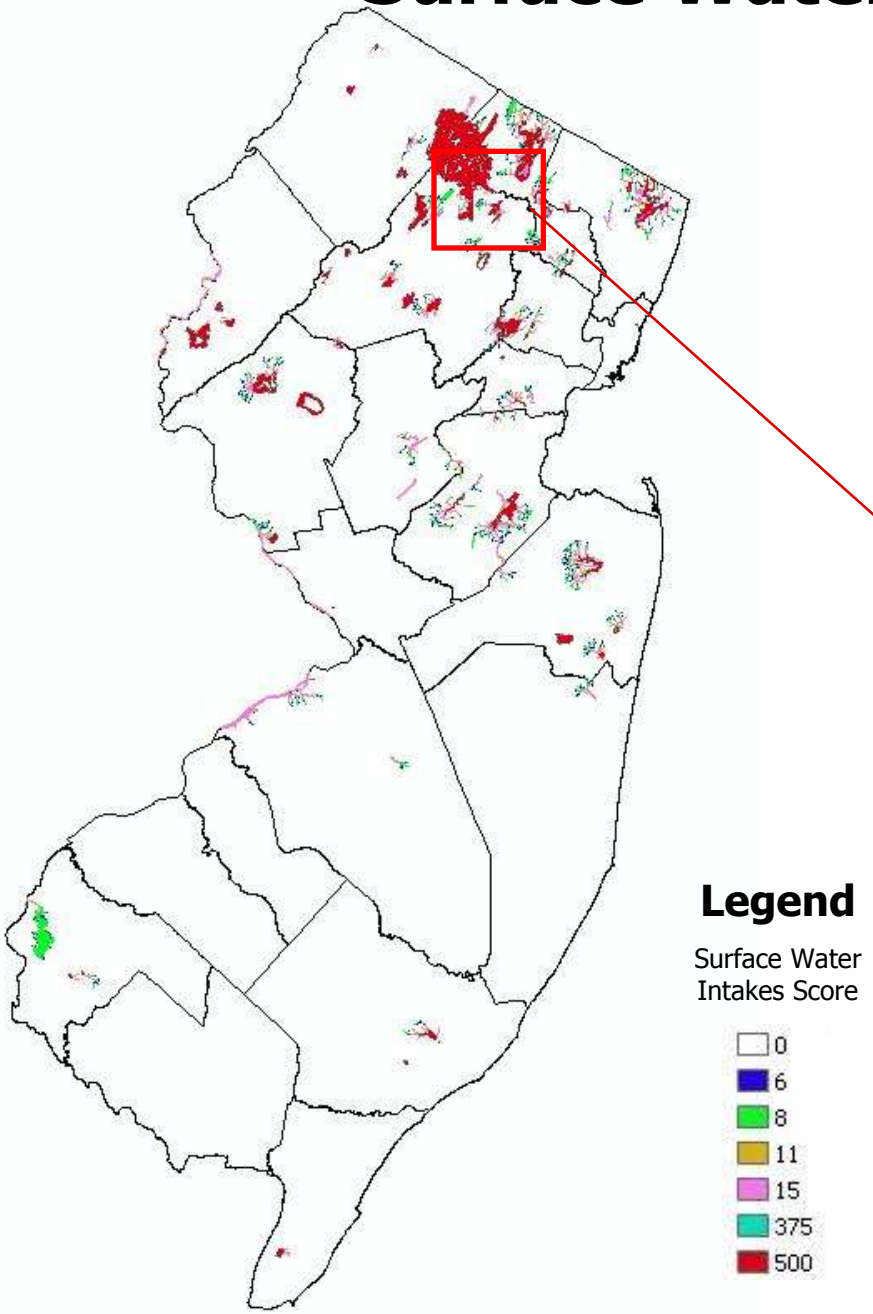
GW Extent Area

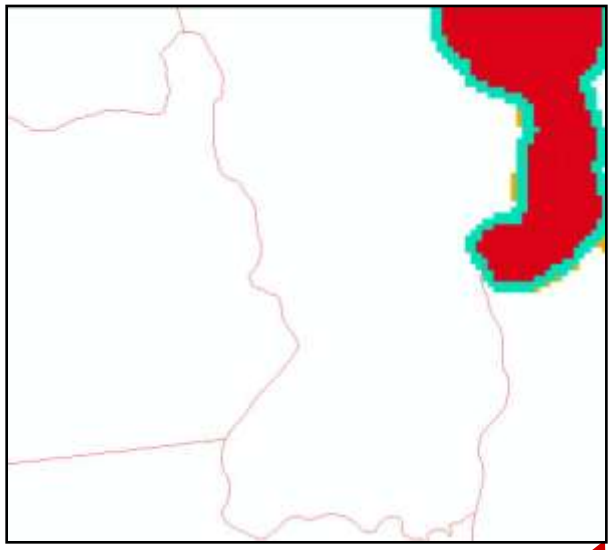
Surface Water Intakes

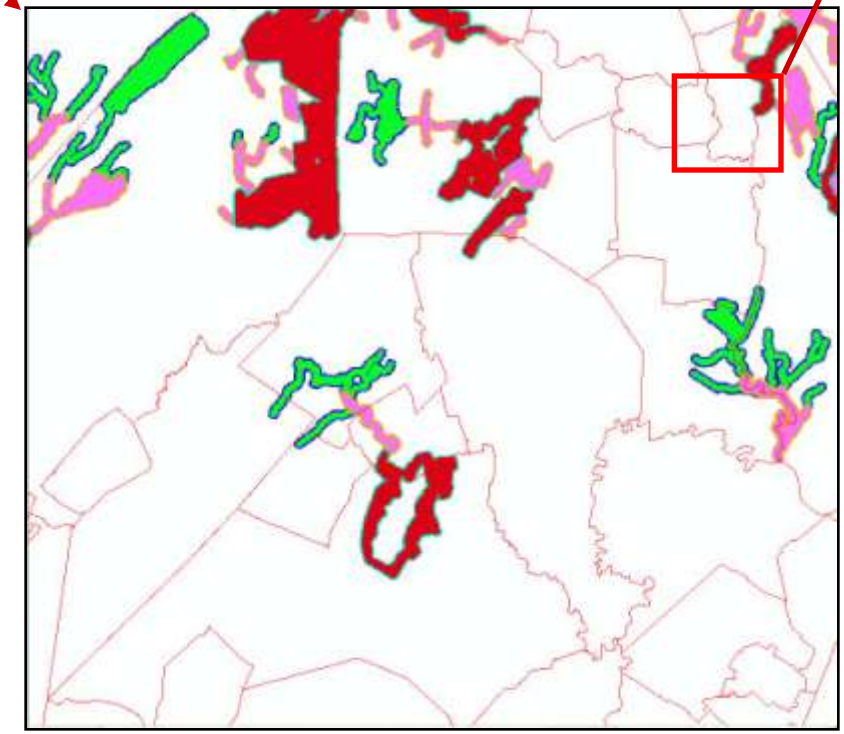
- A Surface Water Intakes Layer is created for the entire state.

- The following is the layer used to calculate the Surface Water Intakes Receptor Layer Score

Surface Water Intakes Layer







Legend

Surface Water Intakes Score

- 0
- 6
- 8
- 11
- 15
- 375
- 500